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NEW CHAPTERS IN

THE WARFARE OF SCIENCE

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BY

ANDREW DICKSON WHITE, LL. D., L. H. D.
EX-PRESIDENT OF CORNELL UNIVERSITY

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REPRINTED FROM THE POPULAR SCIENCE MONTHLY
FOR JUNE, 1892

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NEW CHAPTERS IN

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XVI.

THE RETREAT OF THEOLOGY IN THE GALILEO CASE.

ANY history of the victory of astronomical science over theology would be incomplete without some account of the retreat made by the Church from all its former positions in the Galileo case.

The retreat of the Protestant theologians was not difficult. A little skillful warping of Scripture, and a little skillful use of that time-honored phrase attributed to Cardinal Baronius, that the Bible is given to teach us, not how the heavens go, but how men go to heaven, sufficed.

But in the older Church it was far less easy. The retreat of the sacro-scientific army of Church apologists lasted through two centuries.

In spite of all that has been said by these apologists, there no longer remains the shadow of a doubt that the papal infallibility was committed fully and irrevocably against the double revolution of the earth. As the documents of Galileo's trial now published show, Paul V pushed on with all his might the condemnation of Galileo in 1616, and the condemnation in that same year of the works of Copernicus and all others teaching the motion of the earth around its own axis and around the sun. So, too, in the condemnation of Galileo in 1633, and in all the proceedings which led up to it and which followed it, Urban VIII was the central figure. Without his sanction no action could have been taken.

True, the Pope did not formally sign the degree against the Copernican theory *then;* but this came later: in 1664 Alexander VII prefixed to the Index containing the condemnations of the works of Copernicus and Galileo and "all books which affirm the motion of the earth," a papal bull signed by himself, binding the contents of the Index upon the consciences of the faithful. This bull confirmed and approved in express terms, finally, deci-

sively, and infallibly, the condemnation of "all books teaching the movement of the earth and the stability of the sun." *

The position of the mother Church, then, was especially difficult. The first important move in retreat by the apologists was the statement that Galileo was condemned, not because he affirmed the motion of the earth, but because he supported it from Scripture. There was a slight appearance of truth in this. Undoubtedly, Galileo's letters to Castelli and the grand duchess, in which he attempted to show that his astronomical doctrines were not opposed to Scripture, gave a new stir to religious bigotry. For a considerable time, then, this quibble served its purpose; even a hundred and fifty years after Galileo's condemnation it was renewed by the Protestant, Mallet du Pan, in his wish to gain favor from the older Church.

But nothing can be more absurd, in the light of the original documents recently brought out of the Vatican archives, than to make this contention now. The letters of Galileo to Castelli and the grand duchess were not published until after the condemnation; and, although the Archbishop of Pisa had endeavored to use them against him, they were but casually mentioned in 1616, and entirely left out of view in 1633. What was condemned in 1616 by the Sacred Congregation held in the presence of Pope Paul V, as "*absurd, false in theology, and heretical, because absolutely contrary to Holy Scripture,*" was the proposition that "*the sun is the center about which the earth revolves*"; and what was condemned as "*absurd, false in philosophy, and from a theologic point of view, at least, opposed to the true faith,*" was the proposition that "*the earth is not the center of the universe and immovable, but has a diurnal motion.*"

And again, what Galileo was made, by express order of Pope Urban, and by the action of the Inquisition under threat of torture, to abjure in 1633 was "*the error and heresy of the movement of the earth.*"

What the Index condemned under sanction of the bull issued by Alexander VII in 1664 was, "*all books teaching the movement of the earth and the stability of the sun.*"

What the Index, prefaced by papal bulls, binding its contents upon the consciences of the faithful, for two hundred years steadily condemned, was "*all books which affirm the motion of the earth.*"

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* See Rev. William W. Roberts, The Pontifical Decrees against the Doctrine of the Earth's Movement, London, 1885, p. 94; and for the text of the papal bull, Speculatores domus Israel, pp. 132, 133. See also St. George Mivart's article in the Nineteenth Century for July, 1885. For the authentic publication of the bull, see preface to the Index of 1664, where the bull appears, signed by the Pope. The Rev. Mr. Roberts and Mr. St. George Mivart are Roman Catholics, and both acknowledge that the papal sanction was fully given.

Not one of these condemnations was directed against Galileo "for reconciling his ideas with Scripture." *

Having been dislodged from this point, the Church apologists sought cover under the statement that Galileo was condemned, not for heresy, but for contumacy, and for wanting in respect to the Pope.

There was a slight chance, also, for this quibble: no doubt Urban VIII, one of the haughtiest of pontiffs, was induced by Galileo's enemies to think that he had been treated with some lack of proper etiquette: first, by Galileo's adhesion to his own doctrines after his condemnation in 1616; and, next, by his supposed reference in the Dialogue of 1632 to the arguments which the Pope had used against him.

But it would seem to be a very poor service rendered to the doctrine of papal infallibility to claim that a decision, so immense in its consequences, could be influenced by the personal resentment of the reigning pontiff.

Again, as to the first point, the very language of the various sentences shows the folly of this assertion; these sentences speak steadily of "heresy," and never of "contumacy." As to the last point, the display of the original documents settled that forever. They show Galileo from first to last as most submissive toward the Pope, and patient under the papal arguments and exactions. He had, indeed, expressed his anger at times against his traducers; but to hold this the cause of the judgment against him is to degrade the whole proceedings, and to convict Paul V, Urban VIII, Bellarmin, the other theologians, and the Inquisition, of direct falsehood, since they assigned entirely different reasons for their conduct. From this position, therefore, the assailants retreated.†

The next rally was made about the statement that the persecution of Galileo was the result of a quarrel between Aristotelian professors on one side and professors favoring the experimental method on the other. But this position was attacked and carried by a very simple statement. If the divine guidance of the Church is such that it can be dragged into a professorial squabble, and made the tool of a faction in bringing about a most disas-

* See the original trial documents, copied carefully from the Vatican manuscripts; see the Roman Catholic authority, L'Epinois, especially p. 35, where the principal document is given in its original Latin; see, also, Gebler, Die Acten des Galilei'schen Processes, for still more complete copies of the same documents. For minute information regarding these documents and their publication, see Favaro, Miscellanea Galileana Inedita, forming vol. xxii, part iii, of the Memoirs of the Venetian Institute for 1887, and especially pp. 891 and following.

† The invention of the "contumacy" quibble seems due to Monsignor Marini, who appears also to have manipulated the original documents to prove it. Even Whewell appears to have been somewhat misled by him, but Whewell wrote before L'Epinois had shown all the documents, and under the supposition that Marini was an honest man.

trous condemnation of a proved truth, how did the Church at that time differ from any human organization sunk into decrepitude, managed nominally by simpletons, but really by schemers? If that argument be true, the condition of the Church was worse than its enemies have declared it: amid the jeers of an unfeeling world the apologists sought new shelter.

The next point at which a stand was made was the assertion that the condemnation of Galileo was "provisory"; but this proved a more treacherous shelter than the other. When doctrines have been solemnly declared, as those of Galileo were solemnly declared by the highest authority in the Church, "contrary to the sacred Scriptures," "opposed to the true faith," and "false and absurd in theology and philosophy;"—to say that such declarations are "provisory," is to say that the truth held by the Church is not immutable; from this, then, the apologists retreated.*

Still another contention was made—in some respects more curious than any other:—it was, mainly, that Galileo "was no more a victim of Catholics than of Protestants; for they more than the Catholic theologians impelled the Pope to the action taken." †

But if Protestantism could force the papal hand in a matter of this magnitude—involving vast questions of belief and far-reaching questions of policy—what becomes of "inerrancy," of special protection and guidance of the papal authority in matters of faith?

While this retreat from position to position was going on, there was a constant discharge of small-arms, in the shape of innuendoes, hints, and sophistries: every effort was made to blacken Galileo's private character; the irregularities of his early life were dragged forth, and stress even was laid upon breaches of etiquette: but this succeeded so poorly that even as far back as 1850 it was thought necessary to cover this retreat by some more careful strategy.

This strategy is instructive. The original documents of the Galileo trial had been brought during the Napoleonic conquests to Paris: but in 1846 they were returned to Rome by the French Government, on the express pledge by the papal authorities that they should be published. In 1850, after various delays on various pretexts, the long-expected publication appeared. The personage charged with presenting them to the world was Monsignor Marini. This ecclesiastic was of a kind which has too often

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* This argument also seems to have been foisted upon the world by the wily Monsignor Marini.

† See the Rev. A. M. Kirsch on Professor Huxley and Evolution, in The American Catholic Quarterly, October, 1877. The article is, as a whole, remarkably fair-minded, and in the main just, as to the Protestant attitude, and as to the causes underlying the whole action against Galileo.

afflicted both the Church and the world at large. Despite the solemn promise of the papal court, the wily Marini became the instrument of the Roman authorities in evading the promise. By suppressing a document here, and interpolating a statement there, he managed to give plausible standing-ground for nearly every important sophistry ever broached to save the infallibility of the Church and destroy the reputation of Galileo. He it was who supported the idea that Galileo was "condemned, not for heresy, but for contumacy," and various other assertions as groundless.

The first effect of Monsignor Marini's book seemed useful in covering the retreat of the Church apologists. Aided by him, such vigorous writers as Ward were able to throw up temporary intrenchments between the Roman authorities and the indignation of the world.

But some time later came an investigator very different from Monsignor Marini. This was a Frenchman, M. L'Epinois. Like Marini, L'Epinois was devoted to the Church; but, unlike Marini, he could not lie. Having obtained access in 1867 to the Galileo documents at the Vatican, he published fully several of the most important, without suppression or piously-fraudulent manipulation. This made all the intrenchments based upon Marini's statements untenable. Another retreat had to be made.

And now came the most desperate effort of all. The apologetic army, reviving an idea which the popes and Church had spurned for centuries, declared that the popes *as popes* had never condemned the doctrines of Copernicus and Galileo; that they had condemned them as men simply; that therefore the Church had never been committed to them; that the condemnation was made by the cardinals of the Inquisition and Index; and that the Pope had evidently been restrained by interposition of Providence from signing their condemnation. Nothing could show the desperation of the retreating party better than jugglery like this. The facts are, that in the official account of the condemnation by Bellarmin, in 1616, he declares distinctly that he makes this condemnation "in the name of his Holiness the Pope." *

Again, from Pope Urban downward, among the Church authorities of the seventeenth century, the decision was always acknowledged to be made by the Pope and the Church. Urban VIII spoke of that of 1616 as made by Pope Paul V and the Church, and of that of 1633 as made by himself and the Church. Pope Alexander VII in 1664, in his bull "Speculatores," solemnly sanctioned the condemnation of all books affirming the earth's movement.†

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* See the citation from the Vatican manuscript given in Gebler, p. 78.

† For references by Urban VIII to the condemnation as made by Pope Paul V, see pp. 136, 144, and elsewhere in Martin, who much against his will is forced to allow this. See

When Gassendi attempted to raise the point that the decision against Copernicus and Galileo was not sanctioned by the Church as such, an eminent theological authority, Father Lecazre, rector of the College of Dijon, publicly contradicted him, and declared that it "was not certain cardinals, but the supreme authority of the Church," that had condemned Galileo; and to this statement the Pope and other Church authorities gave consent either openly or by silence. When Descartes and others attempted to raise the same point, they were treated with contempt. Father Castelli, who had devoted himself to Galileo, and knew to his cost just what the condemnation meant and who made it, takes it for granted in his letter to the papal authorities that it was made by the Church. Cardinal Querenghi, in his letters: the ambassador Guicciardini, in his dispatches; Polacco, in his refutation: the historian Viviani, in his biography of Galileo—all writing under Church inspection and approval at the time, took the view that the Pope and Church condemned Galileo, and this was never denied at Rome. The Inquisition itself, backed by the greatest theologian of the time, Bellarmin, took the same view. Not only does he declare that he makes the condemnation "in the name of his Holiness the Pope," but we have the Roman Index, containing the condemnation for nearly two hundred years, prefaced by a solemn bull of the reigning Pope binding this condemnation on the consciences of the whole Church, and declaring year after year that "all books which affirm the motion of the earth" are damnable. To attempt to face all this, added to the fact that Galileo was required to abjure "the heresy of the movement of the earth" by written order of the Pope, was soon seen to be impossible. Against the assertion that the Pope was not responsible we have all this mass of testimony, and the bull of Alexander VII in 1664.*

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also Roberts, Pontifical Decrees against the Earth's Movement, and St. George Mivart's article, as above quoted; also Reusch, Der Index verbotenen Bücher, Bonn, 1885, vol. ii, pp. 29 *et seq.*

* For Lecazre's answer to Gassendi, see Martin, pp. 146, 147. For the attempt to make the crime of Galileo a breach of etiquette, see Dublin Review, as above. Whewell, vol. i, p. 283. Citation from Marini: "Galileo was punished for trifling with the authorities, to which he refused to submit, and was punished for obstinate contumacy, not heresy." The sufficient answer to all this is that the words of the inflexible sentence designating the condemned books are "Libri omnes qui affirmant telluris motum." See Bertrand, p. 59. As to the idea that "Galileo was punished, not for his opinion, but for basing it on Scripture," the answer may be found in the Roman Index of 1704, in which are noted for condemnation "Libri omnes docentes mobilitatem terræ et immobilitatem solis." For the way in which, when it was found convenient in argument, Church apologists insisted that it *was* "the Supreme Chief of the Church by a pontifical decree and not certain cardinals" who condemned Galileo and his doctrine, see Father Lecazre's letter to Gassendi, in Flammarion, Pluralité des Mondes, p. 427, and Urban VIII's own declarations as given by Martin. For the way in which, when necessary, Church apologists asserted the very con-

This contention, then, was at last utterly given up by honest Catholics themselves. In 1870 a Roman Catholic clergyman in England, the Rev. Mr. Roberts, evidently thinking that the time had come to tell the truth, published a book entitled The Pontifical Decrees against the Earth's Movement. In this were exhibited the incontrovertible evidences that the papacy had committed itself and its infallibility fully against the movement of the earth. The Rev. Mr. Roberts showed from the original record that Pope Paul V, in 1616, had presided over the tribunal condemning the doctrine of the earth's movement, and ordering Galileo to give up the opinion. He showed that Pope Urban VIII, in 1633, pressed on, directed, and promulgated the final condemnation, making himself in all these ways responsible for it. And, finally, he showed that Pope Alexander VII, in 1664, by his bull,—Speculatores domus Israel,—attached to the Index, condemning "all books which affirm the motion of the earth," had absolutely pledged the papal infallibility against the earth's movement. He also confessed that under the rules laid down by the highest authorities in the Church, and especially by Sixtus V and Pius IX, there was no escape from this conclusion.

Various theologians attempted to evade the force of the argument. Some, like Dr. Ward and Bouix, took refuge in verbal niceties; some, like Dr. Jeremiah Murphy, comforted themselves with declamation. The only result was, that in 1885 came another edition of the Rev. Mr. Roberts's work, even more cogent than the first; and, besides this, an essay by that eminent Catholic, St. George Mivart, acknowledging the Rev. Mr. Roberts's position to be impregnable, and declaring virtually that the Almighty allowed Pope and Church to fall into complete error regarding the Copernican theory, in order to teach them that science lies outside their province, and that the true priesthood of scientific truth rests with scientific investigators alone.*

In spite, then, of all casuistry and special pleading, this sturdy honesty ended the controversy among Catholics themselves, so far as fair-minded men are concerned.

In recalling it at this day there stand out from its later phases two efforts at compromise especially instructive, as showing the embarrassment of militant theology in the nineteenth century.

The first of these was made by John Henry Newman in the days when he was hovering between the Anglican and Roman

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trary of this, declaring that "it was issued in a doctrinal decree of the Congregation of the Index, and *not* as the Holy Father's teaching," see Dublin Review, September, 1865.

* For this crushing answer, and by two eminent Roman Catholics, to the sophistries cited—an answer which does infinitely more credit to the older Church than all the perverted ingenuity used in concealing the truth or breaking the force of it—see Roberts and St. George Mivart, as already cited.

Churches. In one of his sermons before the University of Oxford he spoke as follows:

"Scripture says that the sun moves and the earth is stationary, and science that the earth moves and the sun is comparatively at rest. How can we determine which of these opposite statements is the very truth till we know what motion is? If our idea of motion is but an accidental result of our present senses, neither proposition is true and both are true: neither true philosophically; both true for certain practical purposes in the system in which they are respectively found."

In all anti-theological literature there is no utterance more hopelessly skeptical. And for what were the youth of Oxford led into such bottomless depths of disbelief as to any real existence of truth or any real foundation for it? Simply to save an outworn system of interpretation into which the gifted preacher happened to be born.

The other utterance was suggested by De Bonald and developed in the Dublin Review, as is understood, by one of Newman's associates. This argument was nothing less than an attempt to retreat under the charge of deception against the Almighty himself. It is as follows: "But it may well be doubted whether the Church did retard the progress of scientific truth. What retarded it was the circumstance that God has thought fit to express many texts of Scripture in words which have every appearance of denying the earth's motion. But it is God who did this, not the Church; and, moreover, since he saw fit so to act as to retard the progress of scientific truth, it would be little to her discredit, even if it were true, that she had followed his example."

This argument, like Mr. Gosse's famous attempt to reconcile geology to Genesis—by supposing that for some inscrutable purpose God deliberately deceived the thinking world by giving to the earth all the appearances of development through long periods of time, while really creating it in six days, each of an evening and a morning—seems only to have awakened the amazed pity of thinking men. This, like the argument of Newman, was the last desperate effort of Anglican and Roman divines to save something from the wreckage of theology.*

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* For the quotation from Newman, see his Sermons on the Theory of Religious Belief, sermon xiv, cited by Bishop Goodwin in Contemporary Review for January, 1892. For the attempt to take the blame off the shoulders of both Pope and cardinals, and place it upon the Almighty, see the article above cited, in the Dublin Review, September, 1865, p. 419, and July, 1871, pp. 157 *et seq.* For a good summary of the various attempts, and for replies to them in a spirit of judicial fairness, see Th. Martin, Vie de Galilée, though there is some special pleading to save the infallibility of Pope and Church. The bibliography at the close is very valuable. For details of Mr. Gosse's theory, as developed in his Omphalos, see my chapter on Geology.

All these well-meaning defenders of the faith have but wrought into the hearts of great numbers of thinking men the idea that there is a necessary antagonism between science and religion. Like the landsman who lashes himself to the anchor of the sinking ship, they have attached Christianity by the strongest cords of logic which they could spin to these mistaken ideas in science, and, could they have had their way, the advance of knowledge would have ingulfed both together.

On the other hand, what has science done for religion? Simply this: Copernicus, escaping persecution only by death; Giordano Bruno, burned alive as a monster of impiety; Galileo, imprisoned and humiliated as the worst of misbelievers; Kepler, hunted alike by Protestant and Catholic—gave to religion new foundations, new and more ennobling conceptions.

Under the old system, that princely astronomer, Alphonso of Castile, seeing the inadequacy of the Ptolemaic theory, yet knowing no other, startled Europe with the blasphemy that, if he had been present at creation, he could have suggested a better order of the heavenly bodies. Under the new system, Kepler, filled with a religious spirit, exclaimed, "I do think the thoughts of God." The difference in religious spirit between these two men marks the conquest made in this long struggle by Science for Religion.*

Nothing is more unjust than to cast especial blame for all this resistance to science upon the Roman Church. The Protestant Church, though rarely able to be so severe, has been more blameworthy. The persecution of Galileo and his compeers by the older Church was mainly at the beginning of the seventeenth century; the persecution of Robertson Smith, and Winchell, and Woodrow, and Toy, and the young professors at Beyrout, by various Protestant authorities, was near the end of the nineteenth century. Those earlier persecutions by Catholicism were strictly in accordance with principles held at that time by all religionists, Catholic and Protestant, throughout the world; these later persecutions by Protestants were in defiance of principles which all Christendom to-day holds or pretends to hold, and none make louder claim to hold them than the very sects which persecuted these eminent Christian men of our day, whose crime was that they were intelligent enough to accept the science of their time, and honest enough to acknowledge it.

Nor can Protestantism rightly taunt Catholicism for excluding knowledge of astronomical truths from European Catholic universities in the seventeenth and eighteenth centuries, while real knowledge of geological and biological and anthropological truth

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* As a pendant to this ejaculation of Kepler may be cited the words of Linnæus: "Deum omnipotentem a tergo transeuntem vidi et obstupui."

is denied or pitifully diluted in so many American Protestant colleges and universities in the nineteenth century.

Nor has Protestantism the right to point with scorn to the Catholic "Index," and call attention to the fact that nearly every really important book in the last three centuries has been forbidden by it, so long as young men in so many American Protestant universities and colleges, and university extension schemes, and "approved courses of reading," are filled with "ecclesiastical pap" rather than with real thought, and directed to the works of "solemnly constituted impostors," while they are studiously kept away from such leaders in modern thought as Darwin, Spencer, Huxley, Draper, and Lecky.

It may indeed be justly claimed by Protestantism that some of the former strongholds of her bigotry have become liberalized; but, on the other hand, Catholicism can point to the fact that Pope Leo XIII, now happily reigning, has made a noble change as regards open dealing with documents. The days of Monsignor Marini, it may be hoped, are gone. The Vatican Library, with its masses of historical material, has been thrown open to Protestant and Catholic scholars alike, and this privilege has been freely used by men representing all shades of religious thought.

As to the older errors, the whole civilized world was at fault—Protestant as well as Catholic. It was not the fault of religion; it was the fault of that short-sighted linking of theological dogmas to scriptural texts which, in utter defiance of the words and works of the Blessed Founder of Christianity, narrow-minded, loud-voiced men are ever prone to substitute for religion. Justly is it said by one of the most eminent among contemporary Anglican divines that "it is because they have mistaken the dawn for a conflagration that theologians have so often been foes of light." *

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* For an exceedingly striking statement, by a Roman Catholic historian of genius, as to the *popular* demand for persecution and the pressure of the lower strata in ecclesiastical organizations for cruel measures, see Balmès's Le Protestantisme comparé au Catholicisme, etc., fourth edition, Paris, 1855, vol. ii. Archbishop Spaulding has something of the same sort in his Miscellanies. L'Epinois, Galilée, pp. 22 *et seq.*, stretches this as far as possible to save the reputation of the Church in the Galileo matter. As to the various branches of the Protestant Church in England and the United States, it is a matter of notoriety that the smug, well-to-do laymen, whether elders, deacons, or vestrymen, are, as a rule, far more prone to heresy-hunting than are their better-educated pastors. As to the cases of Messrs. Winchell, Woodrow, Toy, and the professors at Beyrout, with details, see the chapter in this series on The Fall of Man and Anthropology. Among Protestant historians who have been recently allowed full and free examination of the treasures in the Vatican Library, and even those involving questions between Catholicism and Protestantism, are Von Sybel, of Berlin, and Philip Schaff, of New York. And it should be added that the latter went with commendatory letters from eminent prelates of the Catholic Church in Europe and America. For the closing citation, see Canon Farrar, History of Interpretation, p. 432.

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